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Gaelle Brun

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EXAMINER

CHANNAVAJJALA, LAKSHMI SARADA

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/702,441	Applicant(s) BRUN ET AL.	
	Examiner Lakshmi S. Channavajjala	Art Unit 1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-15 and 17-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-9, 11-15 and 17-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10-16-09</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of amendment, response, RCE and IDS all dated 10-16-09 is acknowledged.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10-16-09 has been entered.

Claims 1-9, 11-15 and 17-34 are pending in the instant application.

Instant claims have been amended to exclude the subject matter "C1 to C10 alkoxy" and "Z is not methylene, propylene, isopropylene, 2-hydroxypropylene, isopropyl- 2, 2'-dimethylpropylene, or CH₂-CH(R") wherein R" is a C1-C28 alkyl interrupted by at least one heteroatom, and optionally substituted by a hydroxy at the terminal carbon". In light of the amendments, the following rejection of record has been withdrawn and a new rejection has been made:

Claim Rejections - 35 USC § 112

2. Claims 1-9, 11-15 and 17-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

3. The first paragraph of 35 U.S.C. 112 requires that the "specification shall contain a written description of the invention. "[T]he essential goal' of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed." In re Barker, 559 F.2d 588, 592 n.4, 194 USPQ 470, 473 n.4 (CCPA 1977). Another objective is to put the public in possession of what the applicant claims as the invention. See Regents of the University of California v. Eli Lilly, 119 F.3d 1559, 1566, 43 USPQ2d 1398, 1404 (Fed. Cir. 1997), cert. denied, 523 U.S. 1089 (1998). Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention.

4. Instant claims require a cyclic carbonate as an essential component, which according to the claims should be capable of in situ polymerization. The amendment submitted on 10-16-09 excludes the variable "z" from being methylene, propylene, isopropylene, 2-hydroxypropylene, isopropyl- 2, 2'-dimethylpropylene, or CH₂-CH(R") wherein R" is a C1-C28 alkyl interrupted by at least one heteroatom, and optionally substituted by a hydroxy at the terminal carbon, when x is O, R₂ is O and n is 0. Further, instant claims also exclude Z from being C2-C30 alkylene radicals, optionally

interrupted by at least one heteroatom and optionally substituted by at least one radical chosen from C1-10 alkoxy radical. With the present amendment, Z can include C2-C30 alkylene radicals that are , optionally interrupted by at least one heteroatom and optionally substituted by at least one radical chosen from hydroxy, C6=C30 aryl, amino, carboxyl, halogen and thiol radicals. Z can also include methylene, propylene, isopropylene, 2-hydroxypropylene, isopropyl- 2, 2'-dimethylpropylene, or CH₂-CH(R'') wherein R'' is a C1-C28 alkyl interrupted by at least one heteroatom, and optionally substituted by a hydroxy at the terminal carbon, as long as the condition "when x is O, R₂ is O and n is 0" is not true. Additionally, instant cyclic carbonates may also be formed when R₁ and R₂ form a heterocycle ring or R₂ optionally forms a heterocycle together with an atom of z, the heterocycle being optionally substituted, and optionally comprising at least one heteroatom.

5. Applicants have provided the description of cyclic carbonates on pages 3-6.

Applicants describe the compounds for treatment of hair, skin and/or nails, for example, to give hair body, volume or fullness (page 8 of the specification) owing to their ability to polymerize under external stimulus. Applicants describe that the compounds have the effect of increasing the overall volume of the hair style, while giving hair strength and resilience [004]. Applicants contend that the prior art cyclic carbonates (references described in paragraph [011]) are not capable of polymerizing in situ.

6. The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice (see i)(A), above), reduction to drawings (see i)(B), above), or by disclosure of

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relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus (see i)(C), above). See *Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406. A “representative number of species” means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. The disclosure of only one species encompassed within a genus adequately describes a claim directed to that genus only if the disclosure “indicates that the patentee has invented species sufficient to constitute the genus.” See *Enzo Biochem*, 323 F.3d at 966, 63 USPQ2d at 1615; *Noelle v. Lederman*, 355 F.3d 1343, 1350, 69 USPQ2d 1508, 1514 (Fed. Cir. 2004). While it appears that applicants have attempted to describe the cyclic carbonates of their invention by providing structural formula (I), which constitutes a huge genus, applicants have not provided sufficient description of a representative number of species that falls within the scope of the said genus. A mere listing of the possible substitutions for the variables x, z, R1 and R2 does not constitute a sufficient written description. For instance, instant claimed compounds may include z=c30 alkylene radicals with an amino or thiol substitution. Alternatively, cyclic carbonates with that form heterocycle with R2 and Z (where z may be 20 or 30 carbon chains long) and further substituted by a heteroatom. Applicants have not provided where or which position on Z is such substitution possible, nor did they describe the preparation of such

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compounds. . The only example composition described in the instant specification (0190) is a 5,5'-dimethyldioxan-2-one, which does not represent the entire genus of compounds embraced by structural formula (I) that is claimed and described. Thus, the description of the above compound does not meet the written description requirement. With respect to the functional description of the compounds encompassed by the claimed genus of cyclic carbonates, applicants further state in paragraph [027] that the compounds of formula (1) may for example be those described in the documents described on page 7. The written description ' requirement implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor 's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1084 (Fed. Cir. 2005). However, Examiner notes that, the cyclic carbonates described in claim 13, criteria V, includes compounds that are also described in the references, which according to applicants do not or are not capable of polymerizing with an external stimulus. Even with the compound of instant example, applicants have not provided any results showing the function of the compound or whether the said compound polymerizes (under what external stimulus) and if the composition is capable of increasing the hair volume or strength or resilience, what is the effect that applicants achieve upon employing the compound in treating nails as opposed to hair. Thus, the objective to put the public in possession of what the applicant claims as the invention, has not been met because the specification fails to provide

description of the claimed compounds by "whatever characteristics sufficiently distinguish it".

Claim Rejections - 35 USC § 112

7. Claims 1-4, 11-15 and 17-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Instant claims recite treatment of skin, hair and/or nails without describing what the actual treatment is. It is unclear what are the nails and skin being treated for with the instant composition.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-9, 11-15 and 17-23, 27 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikazu Takata (Macromolecular rapid Commun. 1997, submitted on PTO-1449) in view of WO 99/43667 (WO 99) or WO 98/47995 (WO 98), and further in view US 5362486 to Nandagiri et al.

10. Takata teaches cyclic carbonates that are expandable monomers on polymerization, by single ring-open polymerization (lines bridging pages 461-462). Takata teaches various six and seven-member cyclic carbonates. A list of the polymers have been described in Table 1, table 3 and Figure 2., of which the compounds in Figure 2 include 6-7 member rings of cyclic carbonates, which meet the description for the instant cyclic carbonates, where $n=0$ and $R_2=O$, $x=O$ and $z=C_4$ alkylene of claim 1

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and item vi of claim 13. Takata does not teach cosmetic compositions or the instant claimed method of treating hair, skin or nails.

11. However, instant claims (except claims 6-9), do not recite what treatment is being achieved on hair, skin etc.

12. WO 98 teaches perfume or fragrance materials to be delivered to personal use articles such as shampoos, lotions etc. The fragrance releasing perfume compound of WO 98 has been described on page 3, where it is described that any two of R1, R2, R3 and R4 are independently C1-C20 linear, branched or substituted alkyl may form a ring having from 5-7 atoms. WO 98 teaches that the orthoester compounds may be included in an amount of 0.1% to 10% (page 3), and further teaches that the composition may further include surfactants selected from the group consisting of anionic, nonionic, zwitterionic etc., (page 4) and additional components such as abrasives, builders, bleaches, bleach boosters, dispersants, enzymes, dyes, colorants, filler salts, hydrotropes, enzymes, preservatives, anti-oxidants, chelants, stabilizers, germicides, fungicides, photo disinfectants, and mixtures thereof (page 6). WO 98 teaches that the compositions may be in the form of shampoos, body lotions, creams etc., (page 7). Some of the cyclic orthocarbonates are described on pages 18-21 of WO 99.

13. WO 99 teaches cyclic pro-perfumes and their application to human skin, hair etc. The compounds of WO 99 have a formula as described in page 3 reads on general cyclic carbonates of instant formula I. The variable "y" of the cyclic compound of WO 99 reads instant variable z, variables R1 and OR of the prior art compound reads on instant R2

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and R1 respectively. The compound of WO 99 differs from the instant compounds in that the variable “y” of the reference compound is described as –CR₆R₇ (page 3), whereas instant claims exclude the variable “z” from being an ethylene and propylene group.

14. Nandagiri teaches hair treating compositions comprising one or more oligomer that are polymerized in situ for in creased hair body to hair; provides better and continuous polymer films and on to hair, and also protects and strengthens hair (abstract; col. 1-2). According to Nandagiri, film-forming polymers are used to provide a flexible sheath of polymeric film on the shaped hair after drying and therefore for mechanical reasons retard the return of each individual hair to its original shape (col. 2, L 3-23). According to Nandagiri, in –situ polymerization is better than applying polymers to hair and the monomers that polymerize in situ should not be irritating and harmful to skin (col. 2, L 35-67). Nandagiri teaches aqueous-alcoholic compositions comprising such monomers in the form of mousse, lotion, milk etc (col.4). Nandagiri also suggests monomers activated by heat or light (col. 7-8) as being suitable. In addition to the monomers, Nandagiri teaches polysiloxane and other conditioners (col. 10-11), cosmetic additives such as thickeners, surfactants, dyes, softeners, pearlescent agents, fragrances etc (col. 12-14) and the composition may be in the form of hair spray.

15. Thus, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to employ the cyclic carbonate compounds taught by Takata, in cosmetic or personal care compositions for treating hair and/or skin because while Takata teaches cyclic carbonates for their efficiency in becoming expandable

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upon polymerization and suggests a possible role in cosmetic for treating skin and hair, both WO 99 and WO 98 teaches compounds that have overlapping structure with the instant cyclic compounds for their fragrance in cosmetic compositions; and further the WO references suggest including the known cosmetic additives such as surfactants, dyes, abrasives, builders, bleaches, bleach boosters, dispersants, enzymes, dyes, colorants, filler salts, hydrotropes, enzymes, preservatives, anti-oxidants, chelants, stabilizers, germicides, fungicides, photo disinfectants, and mixtures thereof etc., in the compositions. Furthermore, Nandagiri suggests that monomeric compounds that are capable of polymerizing in situ impart body, volume and strength to hair without returning to the original shape of the hair. Further, Nandagiri also teaches incorporating additional cosmetic ingredients in compositions comprising such in situ polymerizable compounds. A skilled artisan would have expected the compounds of Takata to impart fragrance (owing to their similarity with the compounds of WO 99 and WO 98) as well as impart body, volume, fullness and strength to the hair (owing to their ability to polymerize in vitro). A skilled artisan would have employed appropriate amounts of the compounds of Takata with an expectation to achieve the desired fragrance and hair strengthening effect.

16. Claims 1-9, 11-15 and 17-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,156,077 to Shibata et al and Yoshikazu Takata (Macromolecular rapid Commun. 1997, submitted on PTO-1449) in view of US 5362486 to Nandagiri et al.

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17. Shibata teaches a hair composition comprising an oxyalkylenated xanthan gum, a film forming polymer, a reducing agent and an oxidation dye (paragraph bridging col. 1-2). Shibata teaches oxidation dyes and reducing agents in col. 5-6. Shibata teaches inclusion of film formers in hair compositions in col. 7-8. Shibata fails to teach the instant cyclic carbonates. The amounts of each of the components taught by Takata are within the claimed ranges.

18. Takata, discussed above, teaches cyclic carbonates for hair and skin applications but does not envisage such compositions.

19. Nandagiri, discussed above, teaches the advantages of employing a monomer that polymerizes in situ upon applying the composition containing such monomer to hair. Nandagiri states that the monomeric compounds that are capable of polymerizing in situ impart body, volume and strength to hair without returning to the original shape of the hair. Further, Nandagiri also teaches incorporating additional cosmetic ingredients in compositions comprising such in situ polymerizable compounds. A skilled artisan would have expected the compounds of Takata to impart fragrance (owing to their similarity with the compounds of WO 99 and WO 98) as well as impart body, volume, fullness and strength to the hair (owing to their ability to polymerize in vitro). Thus, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to employ the cyclic carbonate compounds taught by Takata, in hair care compositions of Shibata in place of a film forming polymer of Shibata because Nandagiri teaches the advantages of monomers polymerizing in situ over applying film-forming polymers such as impart body, volume and strength to hair without returning to the

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original shape of the hair. A skilled artisan would have employed appropriate amounts of the compounds of Takata with an expectation improve hair volume, hair strengthening effect and also not observe any irritation with the compounds of Takata.

Response to Arguments

20. Applicant's arguments with respect to claims 1-9, 11-15 and 17-34 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S. Channavajjala whose telephone number is 571-272-0591. The examiner can normally be reached on 9.00 AM -5.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila G. Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lakshmi S Channavajjala/
Primary Examiner, Art Unit 1611
January 25, 2010